....The Enterprise Double Dissolving Stereopticon....

with Improved Optigraph

Model No. 3 AND THE INSTANTANEOUS COMBINATION ATTACHMENT.

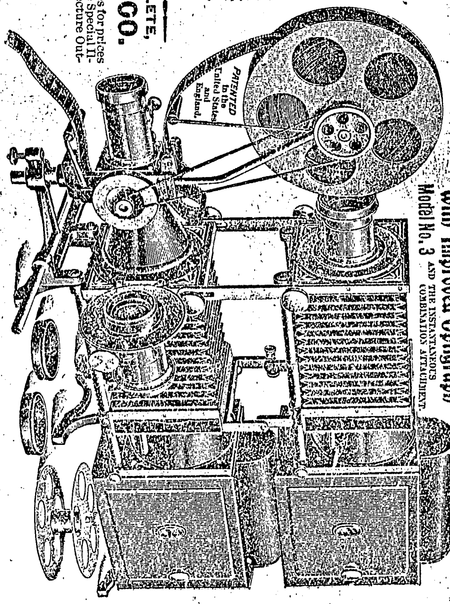
Theoperator can show dissolving Stereopticon views, and change to motion pictures within two seconds.

◆

The Enterprise Double Dissolving Stereopticon is a first class instrument in every respect. For further description of Stereopticon, see other pages.

PRICE— COMPLETE, $94.00.

See other pages for prices on Complete Special Illustrated Lecture Outfit.

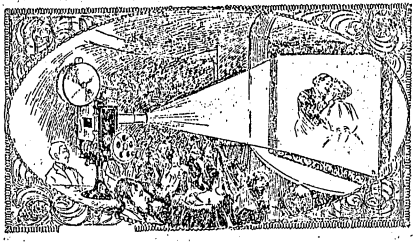


Instructions and General Information ...for

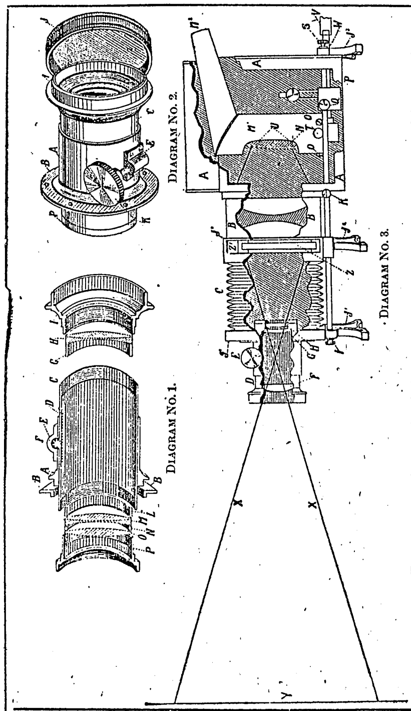
Motion Picture Exhibitors and Stereopticon Lecturers

Who Use

ENTERPRISE INSTRUMENTS and OUTFITS.



1906 EDITION



The above cuts show sectional views of both the Enterprise Stereopticon and Objective Lens.
For descriptions see following pages.

The Stereopticon.

Description of Parts.

In diagram No. 3, **A** represents the lamp house, **B** the metal mounting, or case for the condensing lenses. **C**, bellows. **D**, objective lens barrel. **E**, thumb nut to rack and pinion. **F**, front objective lens. **G** and **H**, rear objective lenses. **I**, screws for securing sliding attachment for Optigraph. **J**, stereopticon frame. **K**, thumb screws for attaching lamp house to frame of stereopticon. **P**, sliding support for lamp. **Q**, thumb nut screw for holding slide in position. **S**, thumb nut screw for securing rear support of lamp house in position. **M**, metal chimney for lamp. **N**, light opening in chimney. **U**, mantle. **V**, part of rubber connection to lamp. **W**, metal tube, a part of burner. **X**, rays of light. **Y**, screen. **Z**, view holder.

Diagram No. 1 represents a section of the objective lens as though it were cut in two, and diagram No. 2 represents it as a whole, with the leather cap removed. **A**, outside tube of objective lens. **B**, threaded disk which is screwed on to the frame of the stereopticon. **C**, lens barrel, or inside tube. **D**, rack. **E**, pinion bridge. **F**, pinion. **G**, front stop ring for holding lens in position. **H**, front lens composed of a double convex and a double concave lens, which are cemented together, thus making a concavo convex lens. **I**, front lens cell and shade. **J**, leather cover. **K**, thumb screw for operating rack and pinion. **L**, threaded stop ring for holding rear lenses in position. **M**, front lens of rear combination. **N**, ring for separating rear lenses. **O**, back lens of rear combination. **P**, cell for rear lens combination.

The Scientific Principles of the Stereopticon.

The Stereopticon or Magic Lantern is an optical instrument, used in connection with a powerful light, for illuminating transparent photographic views, and projecting large images of them on to a white surface, making them visible to large audiences.

The Dissolving Stereopticon is a combination of two or more stereopticons, and is used to produce what is known as dissolving effects. Each section must be centered and focused on the exact same spot on the screen, so that the view placed in the slide in each stereopticon will be projected in exactly the same place. The best dissolving effects are produced by the use of our calcium, acetylene or vapor light. When using these lights, both stereopticons are connected by what is called a Dissolving Key, which is so arranged that almost all the flow of gas can be turned to one jet, leaving just enough passing to the other, that the light will not be entirely extinguished, and throw all the illumination through one view. When the operator wishes to show another view, he turns the lever of the dissolving key slowly from one side to the other, with no distinct dividing line between them, thus producing a very beautiful effect.

A Double Slide Holder, such as we furnish with our Enterprise Single Stereopticon, makes a most excellent substitute for dissolving view effects, as it enables the operator to dispose of one view and put another into its place so quickly that the intermission between the two is scarcely noticeable.

It is very important that the room or hall should be darkened as completely as possible, and the apparatus should always be kept in most perfect condition to insure the best results. The illumination order and position, for unless the lenses are replaced in their proper position, the results will be very unsatisfactory.

Many a lens has been condemned because of the combinations having been removed and not properly replaced. Reference, however, to our diagrams and instructions on one of the preceding pages should prevent any possible misunderstanding.

A morocco covered cap is furnished for the protection of the front lenses, and for use during the exhibition to shut off the light from the screen when no views are being shown. The front lenses should always be capped when not in use.

To Set up and Operate the Stereopticon.

Prepare your light according to the instructions given for the kind of illuminating apparatus you have with your outfit.

For convenience place the lantern at a height which will be about 40 to 42 inches from the floor. A table or box about 30 to 36 inches in height should be secured, and on top of this table place the carrying case which is furnished with the instrument. On top of the carrying case place the instrument, thus bringing the base of the instrument about 40 to 42 inches from the floor. The front end of the instrument should be raised a little higher than the back in order to throw the view high enough to strike the middle of the screen. When the stereopticon is placed in position, the light having been prepared according to the instructions for the same, (see instructions for Giant Incandescent Vapor, Electric, or Calcium Light further on), and, being in good condition, should be placed in its proper position in the lamp-house.

Hanging the Screen. The screens regularly furnished with our special exhibition outfits are 10x12 feet square, and are furnished with ropes and loops for hanging the same. They should be hung with the ropes at the top and bottom, and should be stretched enough to prevent the folds and creases from standing out too prominent.

A light folding frame made of short strips of wood, bolted or screwed together or jointed with ferrules like a jointed fishing rod, has been found a great convenience, as it is always easily put up. When a frame is used, all that is necessary is to put it together, tie the screen to the frame and set it up against the wall, and one or two nails or other fastening is all that is necessary to keep it in place. When the frame is not used, however, nails, screws, or screw eyes can be inserted into the window or door casings, or mouldings for supporting the screen. Suitable ferrules for a jointed screen frame may be had from a sporting goods house; they are used on jointed fishing rods and the cost is but very little.

Size of Picture. On the distance the Stereopticon is set from the screen, depends the size of the picture projected. The farther away the Stereopticon is set, the larger the picture can be made, but the larger the picture, the more light is required; in other words, the illumination being scattered over more surface in a large picture it is not so brilliant as a smaller picture.

With our Enterprise Stereopticon we usually furnish what is known as quarter-size objective lenses. The Stereopticon with a quarter-size objective lens, when set about 20 feet from the screen, will project a picture about 10 feet square. It will sometimes be found convenient to have the Stereopticon farther away from the screen and it can be arranged for such a position by removing the rear combination of lenses from the lens tube. This will enable the operator to project a 10-foot picture at about 40 feet from the screen, and gives about the same results as a two-third size lens.

Now adjust the light, following the instructions for such lighting apparatus as you have with your outfit and the adjustment of the focus is next in order. Insert the slide carrier into the holder in front

of the condensing lenses having the longest portion of the frame at the bottom.

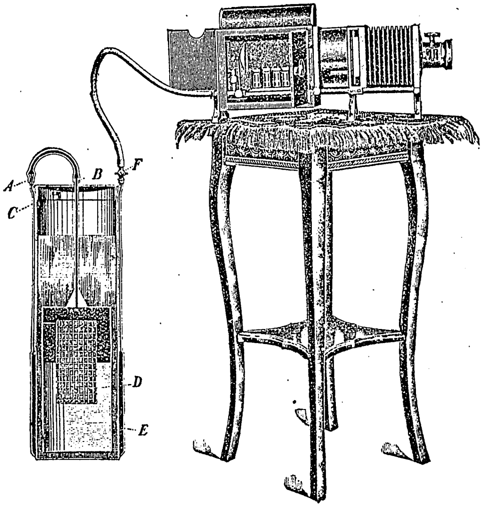
Insert a view with the top part of the same downward (otherwise the view would appear on the screen inverted), and slide the movable part of the carrier so as to bring the view before the condensing lenses.

Turn the thumb nut on the rack and pinion adjustment of the objective lens, and rack the lens back or forward so as to bring it about midway of the distance that it can be shifted. Now slide the front part of the Stereopticon forward until the front part of the objective lens tube is about 7½ inches (if you are using a long focus lens it will be necessary to draw the front out much farther) in front of the condening lenses. At this point the picture should be visible. Now slide the front of the Stereopticon backward and forward a little until a fair degree of sharpness in the picture is secured. Here secure the front in position by tightening the screws. By the use of the rack and pinion, the objective lens can be shifted backwards and forwards a little so as to secure a fine adjustment of the focus and make the picture as sharp as possible on the screen.

To handle the views to the best advantage, they should be placed in the slide box in their regular order.

Place view No. 1 in the slide carrier, and when ready to show it, quickly slide the movable part of carrier so as to bring the view before the condensing lenses. This leaves the other end of the carrier ready to receive view No. 2, which should be inserted while view No. 1 is being shown. When ready for view No. 2, slide the carrier quickly in the opposite direction so as to bring view No. 2 before the lenses; No. 1 can be removed from the other end of the holder, and No. 3 inserted. This method enables the operator to change the views very quickly, is a good substitute for dissolving effects and will prevent confusion or mistake.

The Enterprise ...Acetylene Generator.



DIRECTIONS FOR OPERATING

The Enterprise Acetylene Generator.

Remove top cover by inserting fingers into holes, and turning firmly to the left, which releases cover from lock pin C. To the cover is attached a long metal stem, at the lower end of which a short cylinder is fastened. Within this cylinder a small wire basket D hangs on a hook. Lift wire basket from hook and put carbide into it, sufficient to last during entertainment. (One pound lasts one hour, two pounds for two hours, etc.)

Replace wire basket on hook in cylinder and put all back into original position in large tank, making sure to lock cover down into place as indicated. Now connect stem A with stem B by short piece of rubber tubing. Also connect valve F to burner in Stereopticon by piece of rubber tubing. Should there be any difficulty in connecting rubber tubing moisten the ends with soapy water and they may then be readily adjusted in place.

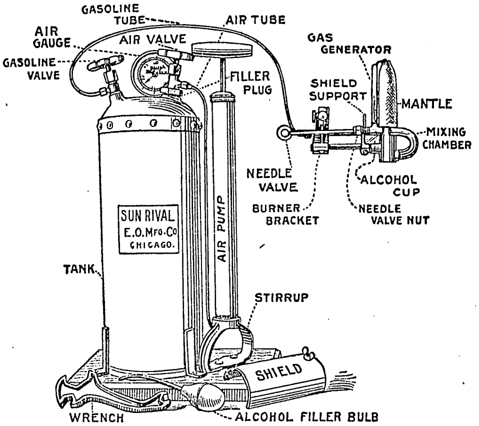
Now see that valve F is closed, and fill tank (through holes in cover) with cold water to within an inch or two of the top. When this is done the valve F may be opened, and in a few moments the gas will begin to form and flow to burner where it may be lighted, as soon as air has passed out of cylinder and gas begins to escape at burner, where it can instantly be detected by its strong smell.

Nothing now remains to be done but to regulate flame at burner by valve F until it is noiseless and without flicker. When through with entertainment, let remaining gas burn out or else permit it to pass off into the open air by passing rubber tube out of window. The tank may then be cleaned and dried.

Be sure and empty out all water and residue from tank after use, It will be found that water will accumulate in the outer shell E surrounding the lower outside surface of tank. This must always be removed after use of apparatus by turning the tank upside down and permitting the water that has been here condensed from the gas vapor to run out through the opened valve F.

NOTE.—The acetylene light may be used in a dissolving lantern by means of a dissolving key, similar in principle and operation to the key used with calcium light.

DIRECTIONS FOR OPERATING THE
Enterprise Sun Rival Hydro-Carbon Gas Outfit.

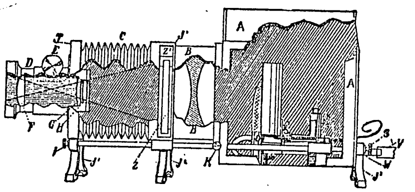


PRINCIPLES OF THE SUN RIVAL GAS LIGHT. The Tank is to be partly filled with gasoline and the balance of the space filled with compressed air, which forces the gasoline up through the flexible gasoline tube and through the gas generator to the burner. The generator must be kept heated to convert the gasoline that passes through it into vapor gas. It is heated to start with, from the alcohol cup and afterwards by the heat from the gas mantle. When the needle valve at the burner is open the vapor gas escapes at a point about one-half inch from the entrance to the mixing chamber. As the gas passes the opening into the mixing chamber it takes with it a sufficient amount of air to convert what otherwise would be a yellow flame into a bright blue flame. The burner is covered with a gas mantle the material of which is made of knitted cotton, saturated

with a mineral salt which makes it indestructible by fire. The combination of the mixed air and gas flame with the mineral salt known as Thorium produces a brilliant incandescent white light over the entire surface of the mantle.

DIRECTIONS FOR USE. With the wrench loosen the small nut and disconnect the air tube from the air valve. Now place the wrench on the filler plug, turn to the left, remove the filler plug entirely from the tank, pour in gasoline until the tank is about one-half full, replace the filler plug and screw down tight. Now connect the air tube to the valve, same as it was when received and tighten the nut moderately with the wrench, open the air valve by turning the wheel on top a few turns to the left and be sure that the gasoline valve is closed. Now place your foot in the stirrup of the air pump and with one or both hands pump the air pressure up until the gauge registers between sixty and seventy pounds, then close the air valve with moderate pressure, to prevent leakage of the air.

The gas mantles are shipped in a round pasteboard box to protect them from injury while in transit, as they are very delicate and must be handled carefully. With each gas mantle is a wire about six inches long for supporting it, and on the left hand side of the burner (looking toward the front of the lantern) is a lug or projection with a perpendicular hole and a screw in the side which



engages with the perpendicular hole. This hole is made to receive the wire mantle support. Now remove the lid from the mantle box, take one of the wire supports and hook the curved end into the little loop on top of the mantle; lift the mantle out of the box and insert the straight end of the wire into the hole in the side of the burner. See that the mantle stands perfectly upright and if it does not, change the position of the wire or bend it sufficiently, that the mantle will stand upright. As a further protection and to prevent them from breaking while in transit, the mantles are coated with parrafine and when the mantle is in position on the burner, this substance must be burned off by lighting it with a match. After burning off the mantle attach the shield to the shield support, with the asbestos lining next to the mantle, and the fork of the support back of the shield. Now bring the burner support which is in the lamp house of the lantern back toward the rear of the lantern as far as it will go and attach the burner to the support by inserting the perpendicular pin on the burner support in the hole in the burner bracket. When the burner has dropped down to a point where it is on a line with the center of the condensing and objective lenses, and is about midway between the two sides of the lamp house, tighten the screw in the burner bracket with sufficient force to hold the burner securely in position. Now attach the end of the flexible gasoline tube to the threaded tube on the burner and slide the burner and carrier forward until the mantle is within about three inches of the condensing lenses. It will be necessary to provide yourself with a bottle of alcohol for starting the gas generator. Take the alcohol filler bulb between your thumb and fingers, insert the end of the tube in the alcohol, release the pressure and the bulb will fill with alcohol. Place the end of the tube in the alcohol cup on the burner, press the bulb and fill the cup with alcohol. Now light the alcohol that you have placed in the alcohol cup and when it is burned out, open the needle valve by giving it two or three half turns to the left and at the same time hold a lighted match to the mantle. If the generator has been heated sufficiently to convert the gasoline into vapor gas, it will ignite immediately and cover the surface with an intensely brilliant incandescent light. By a little experimenting as to the adjustment, turning it one way or another, it will be an easy matter to adjust the flow of gas so as to give the greatest possible amount of light. The entrance to the mixing chamber is placed a short distance from the gas opening in the generator. Careful experimenting has demonstrated that such an opening furnishes the proper amount of air to produce the most perfect combustion and if by a fall or otherwise the position of the mixing chamber should be changed, it should be restored, as nearly as possible, to its original condition.

NOTE: Read the instructions over carefully several times before undertaking to operate the **Enterprise Sun Rival Light.**

Have the stereopticon and gas outfit before you as you read over the instructions so as to observe and study each part as they are referred to in the instruction book, as by so doing, you will understand it more thoroughly and will get better results.

When you have the flow of gas properly regulated, your light brilliant and steady, place the stereopticon so the light will shine through the lenses on some white surface at a distance of fifteen to thirty feet and proceed to carefully adjust the burner so as to give a perfectly even illumination, that is, have no clouds or spots on any portion of the illuminated surface.

For further instructions in adjustment of the light so as to get the best results on the screen, see paragraph, "**placing the jet in proper position**" under the heading of, "Directions for use with Calcium Light."

GENERAL OBSERVATIONS: While the outfit is in operation the presure gauge should register between sixty and seventy pounds.

Do not fill the tank more than half full of gasoline as putting in more would not leave enough room for air space. The tank will work as well when almost empty but to make sure that you do not run short, it is best to have it at least one quarter full. The gasoline may be measured with a stick or anything else that is convenient but we would recommend a cork, attached to a fine wire a little longer than the height of the tank. Whatever you use, make sure that it is long enough that it will not drop clear into the tank, as it would be very difficult to remove.

Be careful to have the filler plug screwed down tightly with a wrench to prevent the air from leaking. A cone seat is used on the tank and filler plug and taper seats on the gasoline and air tubes to insure perfect connection and care should be used to keep these free from dirt, grit or other obstructions, otherwise they will soon become rough and imperfect and will leak.

The inside of needle valve nut is packed with asbestos to prevent the escape of the gasoline around the needle valve stem; if the gasoline should start leaking at this point, tighten the nut a little with the wrench. This will compress the packing and stop the leak. The connections on the flexible gasoline tube should be reasonably tight but should not be turned too tight as there would be danger of stripping the threads.

It is not always possible to carry the outfit from one exhibiting place to another, with the mantle in place on the burner, without breaking it as it is very fragile after the protecting material has been burned off. As they are very cheap however, it is of little consequence, except that, the old mantle gives a little better illumination. It is well to always have a good supply of mantles on hand to avoid the possibility of running short. Whenever a fresh mantle is put on, be sure to light it with a match to burn off the protecting material before the gas is turned on.

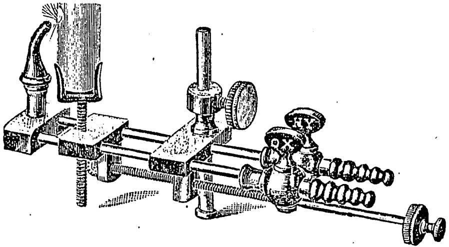
If when turning on the light the illumination seems to be insufficient turn on a little more gas. If by turning the gas full on, the light should still diminish or should rise and fall to a considerable extent, it may be that the generator was not heated sufficiently. If after two or three minutes it continues to be unsteady or diminish it will be necessary to turn off the gas, put in some more alcohol and reheat the generator. The illumination should be exceedingly brilliant, and white all over the surface of the mantle and any variation from this condition will indicate that it is not working properly. Never allow any flame to burn between the generator and the opening of the mixing chamber; should it start to burn at that point turn off the gas and light it again at the mantle.

In using the Sun Rival Light for Motion Pictures, much better results and clearer and more intense illumination will be obtained by attaching to the Optigraph the spun cone and condensing lens. These we furnish complete for $2.00. For electric or calcium light the cone should be used to prevent the side light from illuminating the room, but the sub condensing lens should be removed from the cone.

All Parts are made Interchangable and additional parts may be had at any time. Prices for parts will be quoted on application.

Calcium Light.

This light is known by the names of Oxy-Hydrogen, Calcium or Lime light, and is the most practical and satisfactory method of providing an intense light for Magic Lanterns and Stereopticon illumination. Calcium light is produced by an incandescent surface on a piece of hard, unslaked lime, and is created by the combustion of a combination of oxygen and hydrogen gases. The oxygen and hydrogen gases are each kept in separate tanks or receptacles under heavy pressure, and are connected by rubber tubes to the jet where they combine.



THE CALCIUM LIGHT JET.

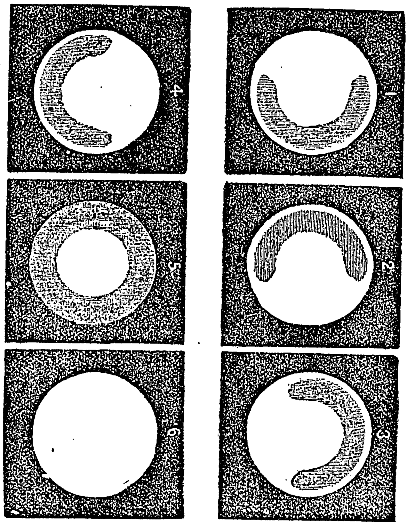
A cylinder of lime (about three-fourths of an inch in diameter) is placed in a vertical position in the three-pronged circular fork, near the opening of the jet, and the combustion of the combined gases on its surface creates a small disk of light of dazzling whiteness. The brilliancy of the rays proceeding from this light is so intense that they will illuminate the projected views over an area of 25 or 30 feet square, if necessary. Owing to its extreme intensity it has great penetration, and is, therefore, the most desirable illumination in halls of moderate size, and is almost indispensable for the largest churches, opera houses and theatres. No other light has ever been produced which will equal it, everything considered, for magic lantern or stereopticon projection.

Directions for the Use of Calcium Light.

Some operators use rubber bags for the storing of the hydrogen and oxygen gases, while some prefer to get their supply from the city gas companies in steel tanks made for that purpose, but for use in smaller towns and cities, the portable calcium light and gas making outfit gives the most universal satisfaction. In either case, the receptacles are provided with nipples for attaching the rubber tubes which are used to connect them with the calcium light jets.

The tanks furnished by the city gas companies are painted to designate the kind of gas contained in each. The red tank contains the oxygen while the black tank contains the hydrogen gas.

Slip one end of the rubber tubes onto the nipple of the hydrogen gas tank or bag, and connect the other end with the left hand side of the jet. Connect one end of the other rubber tube with the oxygen bag or tank, and the other to the right side of the calcium jet. Now take a piece of lime from the box in which they are packed, and you will no doubt, find that it is a little too large to go into the holder. Such being the case, take a knife and shave a little off of the three sides, leaving it just large enough so that the lime will fit snugly into the holder, then adjust it so it sets perfectly upright, and when it is revolved by the holder, it will not vary too much from a perfectly upright position.



DIAGRAMS SHOWING ADJUSTMENT OF CALCIUM LIGHT.

DIRECTIONS FOR THE USE OF CALCIUM LIGHT.

The jet should now be placed in the lamp house, with the lime about three or four inches from the condensing lenses.

Open the valve of the hydrogen tank, light the gas at the jet and turn on the hydrogen until the flame is from four to six inches high, then turn on a sufficient amount of the oxygen gas to almost consume the hydrogen flame. When the oxygen is turned on it creates a kind of whistling sound and this will continue until the right proportion of oxygen is mixed with the hydrogen. When the right proportion is reached, the light will burn without any noise whatever and almost no flame. If too much oxygen is turned on it will produce a roaring noise, and if the oxygen is allowed to flow too much in excess of its proper proportion, the light will extinguish itself with a sharp snap. Should this occur, it will be necessary to turn off the oxygen and immediately light the hydrogen, or turn both off and start anew. In adjusting the flow of oxygen in proportion to the hydrogen, it is necessary to turn the valves slowly, so as to be able to stop when the right proportion is reached. The surface of the lime should be about one-eighth to one-fourth of an inch from the opening of the jet, to obtain the best results.

Placing the jet in the proper position. To have the enlarged pictures uniformally and clearly lighted, it is absolutely necessary that the incandescent surface of the lime cylinder shall be precisely on a line with the center of the condensing and objective lenses, and at the correct distance from the condensing lenses. If the jet is not in the proper position, one part or another of the screen will be dark, whereas, when the adjustment is just right, the entire lighted surface of the screen will be evenly illuminated. The diagrams herewith submitted will be of great assistance to the operator in determining the true position of the jet. Figure 1 shows the appearance of the screen when the jet is too far to the right. Figure 2, when too far to the left. Figure 3 indicates that the jet is too high. Figure 4, when it is too low.

Figure 5 shows the appearance of the screen when the jet is not at the correct distance from the condensers, even though it is correctly centered. The result being a dark ring around the illuminated surface. If the jet is too near the condensers, the rings will have a bluish border, if too far, it will have an orange colored border.

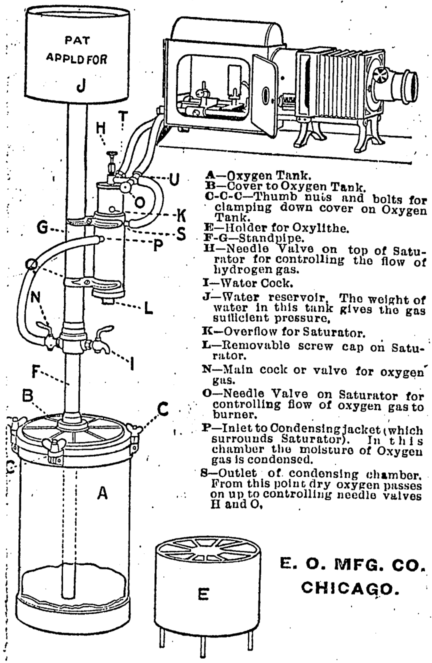
Figure 6 shows the appearance of the illuminated disc on the screen when the position of the jet is "just right," truly centered and at the right distance from the condensers. A little experience will enable the operator to adjust his light properly within a few minutes.

The lime cylinder should be turned as often as every five minutes. Failure to do this is liable to form a pit in the surface of the lime, which may throw a tongue of flame against the condensers, and break them. Usually the light will begin to hiss when the surface is much pitted, and it should be immediately turned. If the opening in the point of the jet is too far away from the lime, it is liable also to cause hissing.

Those who do not care to make their own gas, can get tanks from the large cities. They are supplied by the calcium light companies of this city at $6.25 per pair. A pair of tanks are supposed to last from four to six nights. To those who wish to use calcium light, we would recommend The Enterprise Patent Portable Calcium Light and Gas Making Outfit. The limes are unslacked, and should be kept in air-tight cans when not in use. The proper distance of the lime from the condenser will be found to be about three to three and one-half inches.

* * *

... Parts of Model "B." ...



A—Oxygen Tank.
B—Cover to Oxygen Tank.
C-C-C—Thumb nuts and bolts for clamping down cover on Oxygen Tank.
E—Holder for Oxylithe.
F-G—Standpipe.
H—Needle Valve on top of Saturator for controlling the flow of hydrogen gas.
I—Water Cock.
J—Water reservoir. The weight of water in this tank gives the gas sufficient pressure.
K—Overflow for Saturator.
L—Removable screw cap on Saturator.
N—Main cock or valve for oxygen gas.
O—Needle Valve on Saturator for controlling flow of oxygen gas to burner.
P—Inlet to Condensing jacket (which surrounds Saturator). In this chamber the moisture of Oxygen gas is condensed.
S—Outlet of condensing chamber. From this point dry oxygen passes on up to controlling needle valves H and O.

E. O. MFG. CO.
CHICAGO.

.......Directions for Preparing.......

The Enterprise Portable Calcium Light Outfit.

(Model B)

For convenience in shipping, the outfit has been taken apart, so as to pack it into small space. Take all parts from the case, loosen the thumb screws on the oxygen tank (A), let the bolts drop down and remove cover, after which the parts which are within may be removed.

A charge of oxylithe may now be put into the holder (E) which is divided into compartments, arranged in spiral or step fashion. It is advisable to set the holder (E) on a sheet of tin or iron, so that in charging same the dust and grains of oxylithe may not be scattered over the floor.

Beginning with the deepest pocket insert the oxylithe cakes edgewise, using tongs provided with outfit. Each cake will generate enough gas to run the burner five minutes, and from this it will be easy to determine the amount of oxylithe necessary for whatever length of time may be desired.

~~Should some of the cakes in tin box be found broken up into grains or dust (due to shipping), the same may be gathered up with a piece of tin and dumped into the compartments, as the dust, etc., is quite as good for gas generating purposes as solid cakes.~~

The user is cautioned to handle oxylithe carefully, as it is a powerful alkali similar in nature to caustic soda, strong lye, or potash, which would be very irritating if it came in contact with the skin. Do not touch it with the fingers, or with paper, cotton or woolen fabric, or other similar material, but handle only with wire tongs provided with the outfit, or a pair of rubber gloves. Equal care must be exercised in the matter of allowing the hands to come in contact with the solution which is formed from the combination of water and oxylithe. Such portion of the 24 cakes of oxylithe contained in the sealed tin can as are not placed in the oxylithe holder must be protected from the action of the atmosphere, and for such purpose we recommend the use of a Mason's self-sealing fruit jar, using a rubber ring for excluding the air. A tin can with a screw top, if provided with a rubber ring so as to make it air-tight, will also answer the purpose. When the oxylithe is left open to the action of the air it soon absorbs moisture and rapidly deteriorates.

UNDER NO CIRCUMSTANCES should Oxylithe or the dust or grains of the same be permitted to come in contact with the skin, clothing, wood, paper or woolen fabric, sawdust, or any combustible substance. Oxylithe when alone is not combustible, and if handled with reasonable care will give no trouble.

Important: Do not use the dust in the Oxylithe box. It is used for protecting the cakes in transit, is not Oxylithe and if put into the generator will interfere with the perfect working of the outfit.

After holder (E) has been charged with oxylithe place the holder in tank (A). **See that the rubber gasket or washer is in place in the groove around the edge of cover (B),** place cover on tank, place bolts (C-C-C) in slots in the cover and tighten the nuts, giving the same reasonable and uniform pressure, so as to prevent escape of any of the oxygen gas. The two sections of standpipe (F-G) having been previously screwed together, the standpipe should then be securely screwed to cover (B) **care being first taken to see that the rubber gaskets are in place so as to secure a gas tight union.** Now place the reservoir tank (J) in position, screwing it on the top of the standpipe, **make sure that the main valve or gas cock (N) and the water-cock (I) are closed,** then pour clean water slowly into top of reservoir (J) until the level of same is within about two inches of the top of reservoir. About two gallons will be required. After the light has been started the water in reservoir will slowly sink into lower oxygen tank (A), and it will then be necessary to refill the reservoir (J) with water up to within about two or three inches of the top. No more water will then be necessary during the run.

TO FILL SATURATOR—***(This should never be done near a flame or fire.)*** Remove plug (T) and also the overflow cap (K). Insert funnel in opening at top and pour in slowly Sulphuric Ether or 88° gasoline until it begins to overflow at (K). While filling it is of course necessary to keep the saturator in an upright position. About ten fluid ounces will be required when saturator is charged for the first time. After filling, replace the cap screw (K) and the plug (T), securing same firmly in place. It is advisable to fill the saturator say thirty minutes or so before using, so as to permit the fluid to thoroughly saturate the interior packing. When gasoline is used make sure that nothing of a lower grade than 88° is at hand. This cannot be obtained from drug stores and can only be had in a few of the large cities from responsible dealers in stereopticons, etc., and when ordering be sure to state that it is to be used in a saturator. Where there is any doubt as to the quality of the gasoline it is advisable to use ether, which may be obtained anywhere.

The location of saturator on upright standpipe is best understood by reference to illustration.

Now make sure that all valves are closed (N) (H) and (O) and then connect piece of rubber tubing from (N) to (P) and a shorter piece from (S) to (U) taking care to see that the tube is not kinked so as to choke the flow of gas. If the ends of tubing are first moistened with soapy water, it will be found easier to slip them on in place.

The burner in lantern may now be connected to saturator at outlets (T) and (O). Put a fresh lime in burner allowing a space of about 3-16 of an inch between surface of lime and terminal of goose neck (or outlet).

TO START THE LIGHT—Open the main valve (N) then slowly open the needle valve (H) on top of saturator, and apply a lighted match to burner, allowing the flame to extend two or three inches above the tip of the burner, then slowly open needle valve (O) until the gas from that source forces the hydrogen flame gently against the lime. Several minutes will be required to permit the air (which is in the oxygen tank at the start), to pass through the burner, after which pure oxygen gas begins to form and pass to the burner. The light will then become brilliant, and its maximum power may be obtained by adjusting the valves (H) and (O), until hissing and roaring is stopped, and the surface of the lime presents a small, intensely brilliant spot of light.

The supply of saturator gas to burner should be a little in excess of the oxygen. The presence of a small fringe of reddish flame at lime will indicate this.

Hissing or roaring is caused by an excessive supply of one or both gases, and can be stopped by adjusting the needle valves. When the proper adjustment is secured, the light will burn with but little or no attention. After the outfit has been used once or twice the operator will have no difficulty in securing a beautiful, steady and brilliant light.

Snapping and popping is caused by too great a supply of oxygen and not enough hydrogen, or it may be caused by the fluid supply in saturator running low. About four ounces of fluid per hour is required in saturator, and it is advisable **to fill saturator each time it is** used, taking care of course to see that overflow screw (K) is removed while filling. Should one of the rubber tubes be blown off with a loud report it is almost certainly due to an empty saturator. While the effect is harmless it is apt to startle an audience, and for this reason it is well to see to it that saturator is properly charged before beginning an exhibition.

When through with the light turn off the main valve (N) first, then the needle valve (O) and lastly (H). A series of short, snapping sounds may occur when light is extinguished, but these are harmless. This is due to the small amount of gas remaining in the tubes which comes in contact with the hot surface of the lime. Also disconnect burner tubes from saturator. If through with the light, drain off water (if any), from water cock (I), disconnect tube from valve (N) and unscrew reservoir (J). Now disconnect rubber tube at (S) and slip it over plug (T); this prevents any ether vapor escaping when saturator is not in use. Now unscrew the standpipe (G) to which saturator is clamped, and drain out through (S) any water which may have formed in the jacket surrounding the saturator.

The iron cover on oxygen tank (A) may now be removed, and the tank emptied, after which it should be rinsed out in running water, and wiped with an old cloth. The stand pipe and reservoir (J) should also be rinsed out and wiped, and all parts kept clean and dry.

Be careful at all times not to lose the rubber gaskets or washers, which are necessary to prevent leakage.

Also be careful to see that lead gaskets at (K) and (T) are in place.

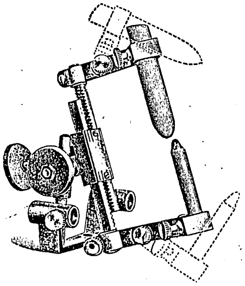
When setting the apparatus up for use, make sure that these are all in place, particularly the large rubber ring fitted in recess of cover, which should be flat and even, and not twisted.

After saturator has been used a dozen times or so the interior filler made of a roll of white flannel should be removed and dried out in the sun out of doors away from flame or light. This is advisable for the reason that gasoline and ether contain a certain amount of non-evaporating substance which remains in saturator and accumulates by repeated use. The lower cap of saturator may be removed by applying wrench at (L). **WHEN THIS CAP IS AGAIN REPLACED MAKE SURE SAME IS STARTED RIGHT ON THE THREAD. THIS IS IMPORTANT IN ORDER TO SECURE A PERFECTLY LEAK-PROOF JOINT.**

Extra flannel fillers for saturator in cylindrical tin case, each 75c

It is advisable to use jet (burner) of small bore. Large bore jets waste gas and do not improve light.

Directions for Using the Enterprise Improved Self-Centering Arc Lamp.



Our Enterprise Electric Arc Lamp is suitable for use with either magic lanterns, Stereopticons or Motion Picture Machines and is provided with what is known as a hand feed adjustment. The carbons must be fed together by turning the handle at the rear of the lamp to compensate for their consumption. **This Lamp can be used on any current, direct or alternating.** The operation of the electric arc lamp is very simple and anyone can operate it after the connections are made; but in making the connections, it should always be done under the supervision of someone who understands the current being used. A rheostat should be used in series with the lamp to regulate the voltage and volume of the current.

The Edison low-tension continuous Current, as used for incandescent lighting, is most suitable for arc lamp projection work. When the above mentioned current is used the upper or positive carbon is consumed twice as rapidly as the lower or negative carbon. To compensate for this inequality in the consumption of the carbons we use in the upper clamp a carbon twice as large as in the lower one; but when using the alternating circuit both carbons are consumed with equal rapidity, and in this case two carbons of the same size are used in the lamp.

The Carbons should be set with the point of the lower one a little further forward than the upper one, so as to throw the illuminated surface a little to the front of the top carbon instead of practically on the point, as it would be if they were both in a direct line with each other. This suggestion applies to the use of the direct current. Where the alternating current is used both carbon points should be set well forward, as indicated by the dotted lines. By this method the illumination is practically toward the condensing lenses.

To connect the lamp one of the feed wires should be attached to the top binding screw on the lamp, another wire should be attached to the lower binding screw on the lamp, and the other end of this wire should be run to one of the binding posts on the rheostat. The other binding post on the rheostat should be connected with the other feed wire. When the current is turned on, turn the wooden knob at rear of the lamp and bring the carbons together until they ignite. Now separate them until the light becomes perfectly steady, and there is as little hissing as possible. If the lamp is properly adjusted it will be almost noiseless.

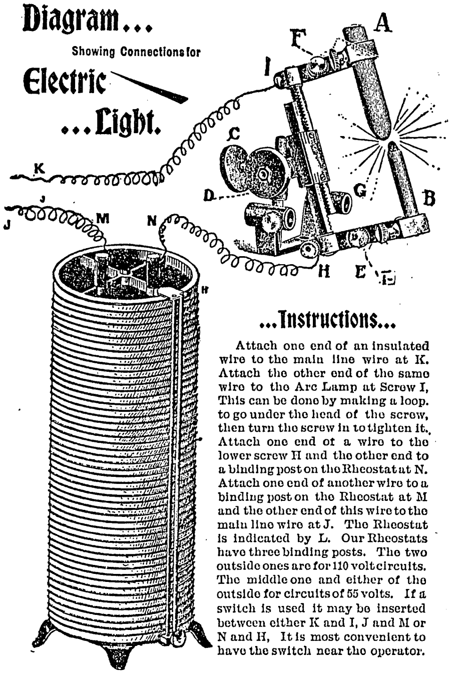
The height and position of the light should be adjusted with the side screw handle. Follow the same instructions for getting the light in proper position, as given for adjusting the calcium light, on another page.

The carbons should be broken in two, and half lengths (about three inches long) used for convenience.

Diagram...

Showing Connections for

Electric ...Light.



...Instructions...

Attach one end of an insulated wire to the main line wire at K. Attach the other end of the same wire to the Arc Lamp at Screw I, This can be done by making a loop. to go under the head of the screw, then turn the screw in to tighten it. Attach one end of a wire to the lower screw H and the other end to a binding post on the Rheostat at N. Attach one end of another wire to a binding post on the Rheostat at M and the other end of this wire to the main line wire at J. The Rheostat is indicated by L. Our Rheostats have three binding posts. The two outside ones are for 110 volt circuits. The middle one and either of the outside for circuits of 55 volts. If a switch is used it may be inserted between either K and I, J and M or N and H, It is most convenient to have the switch near the operator.

INSTRUCTIONS FOR OPERATING THE

Optigraph Motion Picture Machine.

Model 1899.

The optical principle of the moving picture machine is the same as the magic lantern, the only difference being that the pictures appear on a flexible transparent film, passing the lenses in rapid succession.

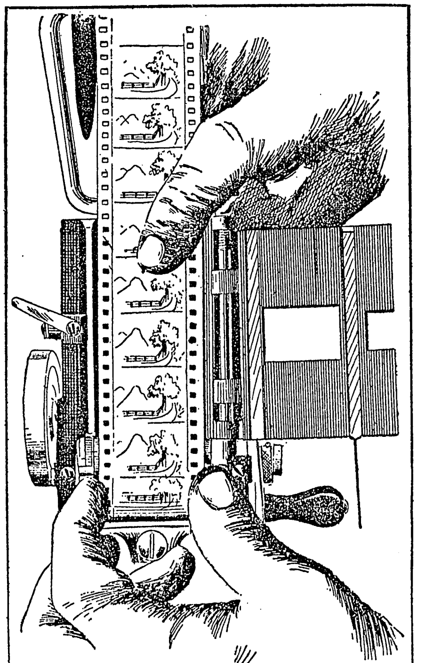
The films which produce the moving pictures are made on a long transparent celluloid tape, the length of which varies from 25 feet upwards. and has on it a series of photographs taken at the rate of from 20 to 40 feet per second. The 50-foot films contain about 800 of these photographs. The movement of the object that has been photographed has been recorded in such rapid succession that when the films are moved past the lenses in the projecting machine, at the same rate at which they were taken, the changes from one picture to another are made so rapidly that the eye cannot detect it, and it seems to present on the screen a single picture with all the movements of life.

For the illumination of moving pictures in theaters. electric or calcium light is the best, but our Vapor Light will give good results in churches, school houses and halls. For the adjustment and manipulation of the light, see directions under the head of Electric or Calcium Light. The light should be about 3 to 3½ inches from the condensing lenses but the exact distance, height, etc., must be determined by the appearance of the light on the screen. As the surface of the picture on the films is but about ¾x1 inch, and as powerful a light as possible is required, it is necessary to set the machine so that the films on the rear of the machine are about 12 inches from the condensing lenses, at which distance they will project a disc of light which is just large enough to fully cover the surface of the picture. Our sub-condenser and cone will be found a great advantage in connection with the Optigraph.

To use the Optigraph with Stereopticon not made by us. The machine should be mounted on a base about 8 inches wide by 26 to 30 inches long, depending on the length of the lantern or stereopticon which it is to be used with. We furnish a beautifully polished and finished oak base board, 8x26 inches long, for $1.00.

The machine must be set so as to be on an exact line with the center of the condensing and objective lenses, so that when the position of the light has been adjusted properly for stereopticon work, that the small disc of light from the condensers will cover fully the opening in the rear of the moving picture machine. The post which connects the machine proper with the iron stand on which it rests will permit of an adjustment of almost one inch for difference in height. This will be sufficient for most magic lanterns, but if the magic lantern is unusually high it will be necessary to put a block of wood under the iron base so as to raise the machine up higher.

Whether the machine is set on something to raise it up or fastened direct to the base board, it must be secured rigidly, so as to prevent vibration while the machine is in operation. The iron base is provided with three holes in which round head screws of about 1 inch in length should be used for securing it to the base board. When changing from moving pictures to stereopticon work it is not necessary to remove the base, simply loosen the screw at the top of the post and lift the machine off, leaving the iron base and post attached to the wooden base.



PUTTING THE FILM IN PLACE ON THE OPTIGRAPH MOVING-PICTURE MACHINE.

INSTRUCTIONS FOR OPERATING.

When using the machine in connection with a stereopticon it will be necessary to remove the objective lens from the stereopticon by unscrewing it from the collar.

When the machine is set to its proper position the light can be adjusted on the screen in the same manner as the instructions given on a previous page for the adjustment of the calcium light for stereopticon work.

The illumination, when it reaches the moving picture machine, being so highly condensed, is very hot, and as the celluloid film is very inflammable, it must not be allowed to remain in one position in front of this light for even a few seconds For this reason we provide with each moving picture machine a plate of sanded glass. This plate of sanded glass should be put in front of the condensers while adjusting the film in the machine, and also while adjusting the focus, in fact to remain there so long as the film stands stationary in the machine. Our double slide holder will be found a very great convenience in handling the ground glass before the condensers.

An extra reel is provided with the 1899 model Optigraph Machine and is intended to be attached to the spindle which projects from the balance wheel on the left hand side of the machine. The reel is a very great convenience in re-winding the film after having been run through the machine.

To wind the film, insert one end under the little wire which projects about an inch in length at the side of the spool. Turn the spool about two rounds with the hand, then start turning the crank, and wind the film as indicated in the engraving.

When the film has been all wound up, remove the side of the top reel by unscrewing the thumb nut. Now remove the film from the winding reel and place it on the spool of the top reel. The film must always be wound so that when unwinding it passes through the machine with the pictures inverted, or, in other words, that the top part of the picture appears below. Now pass the film over the little tension roller **A**, open the door at the rear of the machine, and pass one end of the film just under the sprocket rollers, and over the small cylindrical wooden roller, which is located just under the objective lenses. Now, with the right hand, keep the film from the sprocket teeth, and with the left hand place the film so that one of the pictures comes just over the opening in the back of the machine.

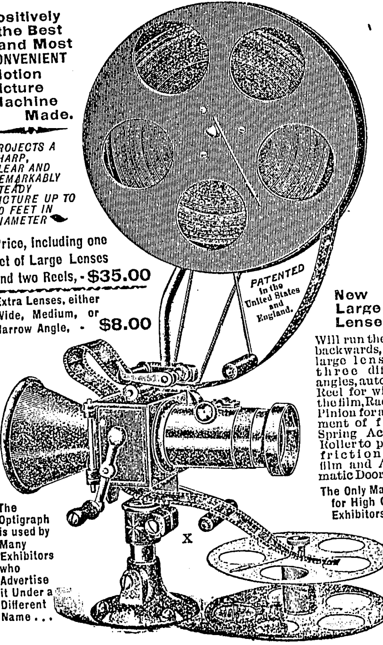
Hold the film in place with the fingers of the left hand, and with right hand put holes in the edge of the film over the nearest points or teeth of the sprocket wheels. Care should be taken, however, that the sprocket wheel has been turned so as to bring it to a full stop before undertaking to put on the films. When the film has been put onto the sprocket teeth, close the door, turn the latch, and now with the thumb screw **B**, raise or lower the gate, so as to make the edges of the opening come just even with the edges of the picture on the film.

The focusing must be done without removing the sanded glass from the condensers, but turn the machine so that the shutter is open, and allows the light to pass through the film and the lenses. Now loosen the screw on top of the lens tube and draw out the inner tube about one-fourth of an inch; this should allow the picture to appear indistinctly on the screen. Now give the lens a rotating motion, at the same time slowly drawing it out, or pushing it in, until the picture is seen to be the sharpest. When you have the picture as sharp as you can make it, the lens is supposed to be in focus and it should be secured with the screw. You are now ready to start and run the film through, but we would advise the first few times that the film be run through without taking away the sanded glass to make sure that everything is working properly. After having run the film through a few times, put it on again, and when everything is in readiness, remove the sanded glass, and immediately start the film in motion. The crank should be turned slowly, and almost immediately the operator will realize what speed is necessary to give the picture natural movements.

The "Improved Optigraph"
Model No. 3 Motion Picture Machine.

Positively the Best and Most CONVENIENT Motion Picture Machine Made.

PROJECTS A SHARP, CLEAR AND REMARKABLY STEADY PICTURE UP TO 30 FEET IN DIAMETER


PATENTED in the United States and England.
X

Price, Including one set of Large Lenses and two Reels, - **$35.00**

Extra Lenses, either Wide, Medium, or Narrow Angle, - **$8.00**

New Large Size Lenses.

Will run the films backwards, uses large lenses of three different angles, automatic Reel for winding the film, Rack and Pinion for adjustment of focus, Spring Actuated Roller to prevent friction on the film and Automatic Door Catch

The Only Machine for High Class Exhibitors.

The Optigraph is used by Many Exhibitors who Advertise it Under a Different Name . . .

A box, basket or our special film bag may be placed in front of the machine for receiving the films as they are run through. It is well to run the films through for the entire entertainment. and then after the entertainment is over, they can all be wound up in a few minutes. By this arrangement, the reel on the left hand side need not be attached to the machine, except when the films are being wound.

The small steel wires which project from the gate are intended to rest on the outside of the sprocket teeth, for the purpose of holding the films against the wheel and onto the teeth. They should be just close enough to the sprocket wheel to give the films a little pressure, but should not be too tight, as it will cause the machine to work with a jerky motion, and will wear the films more or less.

The position of the top feed reel should be as indicated in the engraving, except when it is used with a double lantern, where it would be necessary to adjust it lower.

The Arbor of the Sprocket Wheel is provided with an eccentric bushing or adjustment, which can be adjusted in case the Geneva action which connects with the sprockets should wear. This adjustment is supposed to be set properly when the machines are shipped, and should not be interfered with in a long time, unless from accident or some one tampering with it it should get out of adjustment. The addition of blank film, say a length of 1 foot to each film, will be an economical move, and will enable the operator to use all that portion of the film which has the pictures on.

In order to determine the proper position for the pictures when using the blank film, place the film in the machine, get the position properly adjusted to one of the pictures, then run it backward until about the middle of the blank film is reached. After the film has been adjusted just right, take a pencil and run around the inside of the opening in the gate, marking the square opening on the film. This will enable you, in putting on the film, to determine when the pictures are in proper position on the machine. The addition of the blank film, however, is not really necessary.

Instructions for Using the Improved Optigraph No. 3.

If the Motion Picture Machine is to be used in connection with any other than the Enterprise Stereopticon it will be necessary to attach it to a wood base board, following the same instructions as given for the old model Optigraph, but if to be used with the Enterprise Stereopticon it should be used in connection with the Sliding Attachment which makes it far more convenient and enables the operator to make the change from Motion Pictures to Stereopticon Pictures, or the reverse, by sliding the Motion Picture Machine into or out of line with the condensing lenses.

For convenience in shipping the reel and reel support are removed. When the Optigraph has been placed in position either on the base board or sliding attachment, insert the reel support into the hole on top of the frame, see that it is square with the machine and tighten the screw on the left-hand side of frame to hold the reel support firmly. Now, put on the belt connecting it with the pulley on the balance wheel and the pulley on the reel staff. Now, see that the tension spring (I) and roller (II) are in position, as indicated in both Diagrams 1 and 2. Now. attach the reel and allow the spring on the side of the reel to snap into the notch in the reel shaft. It is necessary always to have the spring press tight enough in the groove to create some friction in order that the reel shaft will carry the reel firmly and steadily.

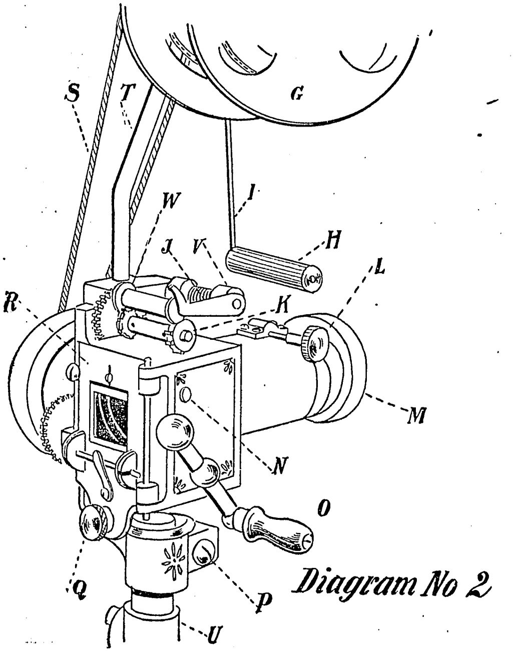


Diagram No 2

When using short films it is best to use the small separable reel. In this case the films may be slipped on to the little wooden roller, but the large reel will be found of advantage for longer films up to 500 feet. It will be found convenient, when using this machine, to cement together enough films for an entire exhibition. Slip the end of the film under the wire loop or roller, then roll them on to the big reel, after which the entire length can be run through the Motion Picture Machine and back again, thus running the film in both directions. The backward motion of the film is very amusing and usually creates more amusement than the forward motion.

In putting the film on the reel it is necessary to start with the last end of the film, or, in other words, so that when the film is running through the machine the pictures will appear with the upper part downwards, for as the lens reverses the pictures they will be shown on the screen right side up.

Now, pass the film under roller **(H)**, raise the frame **(J)** and pass the film (about a foot from the end) between the roller **(W)** and the sprocket wheel **(K)**. Press the button **(N)** and the door **(R)** will open. Swing it back out of the way and place the film in position on the lower sprocket wheel in the same way as indicated in picture on page 28, but allow a loop of film to project above the machine about two inches, as indicated in Diagram No. 1. The reason for this loop is that the film feeds from the lower sprocket with an irregular motion and it is necessary to have a loop between the lower sprocket and the upper feeding sprocket to prevent tearing the film. See that one of the pictures is opposite the opening of the door, close the door, pass the film underneath the machine and over the lower roller, indicated by **(X)** Diagram No. 1. This lower roller is to prevent the film from being scratched by sliding in over the frame.

The film may be run into a bag or box as it passes from the machine, but we recommend a bag which we can furnish with support to attach to frame of machine, price **$2.50**.

To get the picture properly adjusted to the opening in the door turn the thumb nut **(Q)** to the right or to the left until the edges of the opening just meet the edges of the picture. If the film is not in the right position to accomplish this, open the door and change it one notch on the teeth of the main sprocket wheel, and again turn the nut **(Q)**.

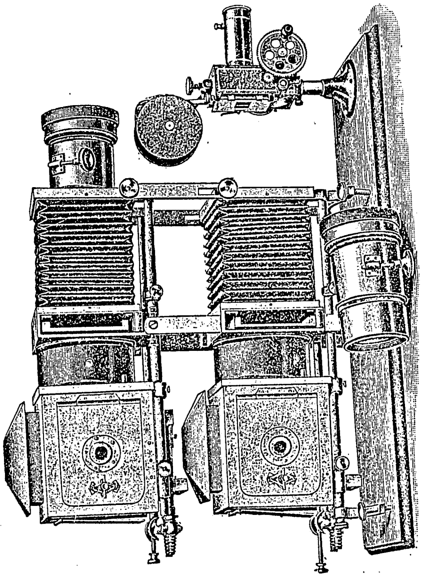
Focusing.

The new model machine has rack and pinion for focusing. While the focusing is being done the ground glass should be placed in the slide carrier and brought in front of the condensing lens to prevent burning the film. In this way the picture will not be bright on the screen, but will show sufficiently that it can be properly focused. To get a sharp focus turn the thumb nut **L**, diagram 2, to the right or to the left until the details in the picture is sharp. The Spun cone will be found of much service when using the Optigraph, as it prevents the side illumination from reaching the screen direct from the condensing lenses and also from illuminating the room. The Spun Cone is attached by hooking it to the door of the Optigraph.

THE SUB-CONDENSING LENS is of much advantage and should be used in the Spun Cone with the flat surface outward when using Vapor Light to show Motion Pictures, as it gives a bright and clear illumination. When using Calcium or Electric Light the Sub-condensing lens should not be used, and the Spun cone is all that is necessary.

THE SLIDING ATTACHMENT. When using the Optigraph Motion Picture Machine with the Enterprise Stereopticon the operator should not fail to secure the Sliding Attachment.

THE OBJECTIVE LENS on the Enterprise Stereopticon is mounted on a door, which is held in place by a latch. This door is kept closed and the Motion Picture Machine is moved to the right of



THE ABOVE SHOWS THE

Optigraph Moving Picture Machine

Attached to a **DOUBLE DISSOLVING STEREOPTICON OR MAGIC LANTERN**

the Stereopticon when Stereopticon views are being shown, but when it is desired to change to Motion Pictures open the door of the Stereopticon, swing it with the objective lens around to the right (if the operator is standing in front of the Stereopticon) and slide the Optigraph directly in front of the Stereopticon.

IMPORTANT—When the Optigraph is used in connection with the Sliding Attachment and Enterprise Stereopticon it will be necessary to re-adjust the bellows when the long focus Stereopticon lens and the No. 1 Motion Picture lens are used. These lenses are most desirable for churches and halls of medium to large size when using Calcium or Electric light. If, however, the operator desires to get a larger picture at a shorter distance from the screen it will be necessary to use the short focus Stereopticon lens, and No. 2 Motion Picture lens, in which case it will be necessary to re-adjust the bellows when changing from Stereopticon to Motion Pictures. When the short focus Stereopticon lens is used and is adjusted to focus it brings the Motion Picture Machine too near the Condensing lenses to get good results and it will be necessary when changing to Motion Pictures to extend the bellows so the Motion Picture Film will be about 12 to 13 inches from the front face of the Condensing lenses. When this change is made if using Calcium or Electric light it will be necessary to readjust the position of the light, but when Vapor Light is being used no change of position in the light will be necessary. Short focus lenses will give the strongest pictures when Vapor light is used, as the light loses a little of its intensity as the distance increases.

The Sliding Attachment is attached to the Stereopticon by means of two screws, and the Motion Picture Machine should be removed from the round metal base which accompanies it and the round post set into the hole in the sliding attachment then tightened in position with the screw intended for that purpose.

CONVENIENCE IN HANDLING FILMS.

The operator will find it a great convenience when using short films if he will provide himself with a number of small cylindrical blocks of wood, cork or other material, about the size of the spool on the reel and keep his films when not in use wound around these spools. Then place a rubber band around the films to hold them in place. This method will keep the opening in the coil of the film of a proper size to go on to the reel spool. By this arrangement all that is necessary is to remove the cores, slip the film on to the spool of the small separable reel and run it through the machine. This applies to short films, as when using the long films on the large reel they can remain on the reel.

THE LENSES.

When using the Motion Picture Machine in connection with Stereopticon pictures it is best to have lenses for both Stereopticon and Motion Picture Machine of corresponding angles—that is, lenses which will throw a picture of nearly the same size from both Stereopticon slides and Motion Picture films. This may be best determined by reference to our catalogue.

CENTERING THE LIGHT.

Much care is necessary in the adjustment of the light, especially when Calcium or Electric Light are used, and before any pictures are shown the films should be placed in the machine and focused, using the ground glass, then remove the film so the plain light may be projected through the Motion Picture Machine and on to the screen and see that all portion of the illumination inside of the square are even and that there are no dark sides, corners or clouds in the square. This is of most vital importance in order to get a good picture.

It will be necessary to see that the light opening in the Motion Picture Machine is in a straight line with the center of the opening in the front of the Stereopticon, and that the lens of the Motion Picture Machine is not turned out of line with the center of the illumination.

Lower Rewind... Attachment

For the Improved Optigraph

Model No. 3

Motion Picture Machine

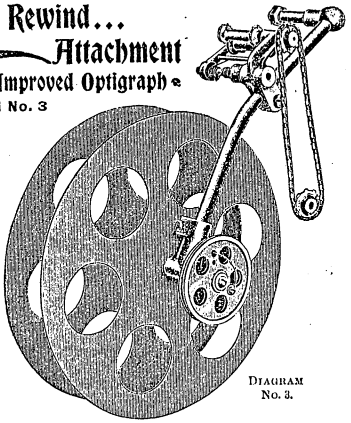


DIAGRAM No. 3.

Instructions.

To attach the lower rewind fixture remove the screw bolt indicated by **P** in Diagram No. 2. Now remove the nut from the rewind fixture indicated by **A** in Diagram No. 3. Insert bolt **B** where bolt **P** was taken out, tighten the nut slightly and adjust to the position as indicated in Diagram No. 4. Now loosen the screw in the balance wheel on the Motion Picture Machine, slip the sprocket wheel indicated by **C** in Diagram No. 3 on the end of the shaft which projects from the Motion Picture Machine just above the balance wheel, leave space about the thickness of thin card board between the sprocket wheel and the frame of the machine and tighten the set screw against the flat surface of the shaft so as to hold the sprocket wheel firmly. Now raise the lower rewind attachment a little so as to enable you to get the chain over the sprocket wheel **C**; then lower the fixture just far enough that the chain runs a little loose, about the same as a bicycle chain. Now, tighten the nut **A** so as to hold the fixture firmly, put on the balance wheel, (being careful to leave enough space between the balance wheel and the gear wheels), tighten the set screw, and put on the belts to both upper and lower pulleys. Now, start the machine and see that it works smoothly. If it does put the film on the upper reel and through the machine, same as indicated in previous instructions, place it under the sprocket wheel **E** indicated in Diagram No. 3, with a good loop between the feeding sprocket wheel **E** and the main sprocket wheel in the Motion Picture Machine. The

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The Improved Optigraph

Model No. 3 with Enterprise Stereopticon.

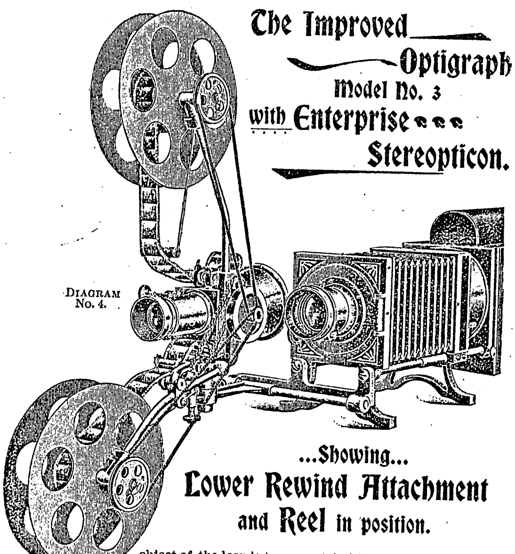


DIAGRAM No. 4.

...Showing... Lower Rewind Attachment and Reel in position.

object of the loop is to prevent jerking of the film and this precaution must be carefully observed. Now, slip the end of the film under the wire on the roller of the lower reel and you are ready to operate.

Always be careful that there is a good loop of film between both the upper and lower feeding sprockets and the main sprocket wheel on the inside of the Motion Picture Machine. If this is not carefully observed the jerking of the film is liable to tear it.

PRICE.

Lower Rewind Attachment with two Reels (one for 100 feet and one for 500 feet) extra Sprocket Wheel and Chain............	$7.50
Extra Reel for 1200 feet of film...	1.75

General Observations.

FOR THE BENEFIT OF EXHIBITORS AND LECTURERS.

Careful attention to the following suggestions will, we think, contribute much to the success of those engaged in this line of work:

Do not undertake to go before the public until you are thoroughly familiar with the operation of your outfit and can go through the different operations almost unconsciously. Throw everything out of adjustment, scatter things about, then readjust, put everything in place, run your films through the Motion Picture Machine, and your slides through the stereopticon one after another in regular succession, until you are so thoroughly familiar with it that you have no fear when you go before the public that you are liable to forget something or make a mistake. Theatrical people who have been on the stage all their lives practice the new play for weeks and even months in advance, and you certainly should not find it a hardship to practice for at least a few days. You will find it a very great satisfaction to yourself on account of the feeling of ease, and certainly it will be a much greater satisfaction to know that you are pleasing the public. At first it would be well to practice by yourself, but after you have become familiar with the performance, invite in the members of your family or most intimate friends, and a little later invite in all the neighbors, and after practicing this way for a few times, or when you have learned to feel perfectly easy, then go before the public.

Be sure to have everything ready and in its place before each exhibition.. See that everything is in working order, in fact light up your stereopticon and make sure there is no experimenting to be done when near to, or at the time the exhibition is to begin.

It is always wise and very important to have duplicate parts of anything which is liable to be broken or damaged, and always keep a good supply of materials such as chemicals, advertising matter, etc., for it may sometime save the price of a whole outfit in one evening, and also save the annoyance of disappointing a large audience as well as the danger of getting yourself into bad repute. Magic lantern or stereopticon views should be carefully arranged in the case provided for them, and the set so arranged that the numbers run consecutively. By so doing it will not be necessary to hunt for or examine the views to see what comes next. Do not put the fingers on the face of the views more than is necessary, but handle them as far as possible by their edges. Keep the views clean by wiping from them all dust or perspiration, or a dull picture will be the result. Do not use paper, however soft it may be, for cleaning views or lenses.

The use of paper or any other hard substance would ruin them. Nothing but old soft linen or soft chamois skin should be used, and it should be kept as clean as possible from dirt or grit, by beating or vigorously shaking it occasionally. Do not use heavy pressure in cleaning views or lenses, as the finest particles of grit are liable to produce scratches when they have lodged in the material used for cleaning. There is no better way to remove an accumulation of dust, fog or perspiration from glass than to hold the glass near the mouth with mouth well open, and blow slowly a full breath on the surface, then immediately wipe the glass with very soft chamois or linen. Chamois is far the best.

Most lecturers operate their own lantern while they are delivering the lecture. This can be done very conveniently, as it places the lecturer near the middle of the audience, where all can hear with ease, and puts him in a position to point with a pencil to any part of the view to which he wishes to attract special attention. A pencil or other small instrument can be used for this purpose, by passing one end immediately in front of the view (not in front of the objective lens) while it is being shown. **Some lecturers employ an operator by preference** to manage the lantern while they deliver the lecture in front of the audience near the projected picture. The operator is also expected to render other valuable services in the way of assisting generally.

Advertising.

In this, like most other lines of business, **advertising is a very important matter** and should be given the most careful attention. **We have made the way easy** by providing the advertising matter already made up for the different exhibitions, illustrated with proper and attractive engravings. **It would cost from $50.00 to $100.00** for the exhibitor to supply himself with a few thousand of one kind of the large advertising posters which we furnish, if he had them made special. This cost would include the setting of the type, the making of the original engravings for the illustrations, the large electrotype plate from which to print the posters, the cost of paper, printing, etc. As the posters are furnished by us, it is only necessary to see that they are distributed and posted up in conspicuous places, on fences, buildings, in store windows, etc. **A newspaper advertisement** will often be found to be a very great advantage in addition to the advertising posters. The length and nature of the advertisement may be governed entirely by the ideas and experience of the exhibitor, besides the town and general conditions, with reference to the locality and the amount it is considered advisable to spend for such purposes.

For the Spanish-American and Filipino Illustrated War Entertainment,

We submit the following suggestion for newspaper advertisement, which should be placed from four days to a week before the entertainment is to be given.

A Trip to Cuba and the Philippines and Return for 25 Cents.

The residents of this city will be treated to an opportunity to make the round trip to Cuba and the Philippines and return in one hour and sixty minutes for 25c. The opportunity comes in the way of a most unique and entertaining panoramic exhibition and lecture, in which will be given full particulars regarding the Spanish-American and Filipino Wars, showing the most important battles and other incidents of special interest. Pictures of the inhabitants, their modes of living, their methods of farming, tropical scenery, etc.

The lecture will be illustrated with fifty-two large size photographic views, many of which are shown in all the colors of nature and magnified to cover 120 square feet of surface. A royal treat is promised and a large attendance is expected. The entertainment will be given under the auspices of the Central Avenue Methodist Church, and a portion of the receipts will go for the benefit of the same.

This entertainment has been very highly complimented by the Logan County Recorder, the Springfield Inquirer, the Des Moines Free Press, and other prominent papers.

If foregoing form is used, any changes may of course, be made to suit the requirements. We only offer it as a suggestion.

It would be best to have the announcement printed in the reading column, in which location it will cost more than a regular notice in the advertising column, **but it is worth much more.** It might be arranged slightly different if put in the regular advertising column, and should be made up with display, in type of different sizes and styles, but if inserted in the reading column, there should be no display excepting the heavy head line which is customary in the reading columns.

Show your vim and enterprise wherever you go and in everything you undertake. **Do not be backward,** but in a gentlemanly way **press forward,** command the attention of those you meet and you will be respected for it.

Never say "I can't" or "I don't believe I am equal to the undertaking." Such thoughts should never enter the mind of any man.

Neatness in personal appearance and politeness in manner are essential to make a good impression on those you meet, and if careful attention is given to these very important points **it will bring dollars to the pocket of the exhibitor,** while the trouble and cost to maintain it will amount to but very little.

"Fine feathers make fine birds" is an old and threadbare adage, but it is too well fitted here to refrain from using it.

Never appear before your audience with your clothes in an untidy condition. Give careful attention to your linen, shave often, keep your hair nicely trimmed, and attend carefully to anything which will add to your personal appearance. The most successful lecturers have been most fastidious in these matters. By this, we do not mean the wearing of jewelry or anything which is gaudy, on the contrary, dress plainly but always neat.

The same neatness should be observed as regards the arrangement of the hall, and many times, at a small expense, the use of a few pots of flowers and other inexpensive decorations would add immensely to the affair. **Many make a great mistake** because they do not realize how largely the popular feeling and sentiment is influenced by what would seem to the exhibitor as being entirely unnecessary.

The above precautions should be observed rigidly when engagements are being made by either an advance agent or the exhibitor himself.

When engagements are to be made by mail some nice neat letter head should be used with your business card printed in the corner, also on the envelopes. For example: "The Winston Illustrated War Lecture and Entertainment Company, Springfield, Ill.

Complimentary tickets can always be given out to advantage, but should be given with judgment and to people of influence, as they will feel highly complimented, and will recommend the entertainment to friends and acquaintances. People to a great extent try to imitate the most influential in their vicinity, and are always anxious to do what the leaders do, and when the best people patronize an entertainment, it is accepted as an indorsement and a guarantee of its merit.

Making engagements is a very important matter and should be attended to far enough in advance to insure that the entertainment will be well advertised and that everybody will have a chance to know of it. The length of time to advertise in advance depends much on the class of entertainment, the locality, the class of people and other conditions. The exhibition should be advertised usually from a week to a few days, but not longer, for if published for more than a week, interest in the affair will be likely to grow old.

Good press notices are a very great assistance, and whenever an opportunity presents itself, the exhibitor should take advantage of it,

and secure as good a write-up as is possible, then take the clipping from the paper in which it appears, have it set up in type and have it printed on small slips to send with letters or to present to the editor of the next paper to influence a good advertisement.

When you meet an editor, whom you think would be accommodating, make arrangements with him for a very liberal advertisement and present him with tickets to admit himself and family to the entertainment, also do anything else you can to contribute to his comfort and pleasure at the entertainment. Whenever anything in this line is done, do it with ease, and do not make it appear that you are putting yourself to any great amount of trouble. Go to him after the entertainment is over, say the next morning, and after asking him how he liked the entertainment, if he expresses himself very favorably, you can prevail upon him to give you a write-up. If he agrees to this suggest what you would like to have him say, and having previously, thought over what you would like to have said you will have it in mind. Make such suggestions as would be a benefit to you as an advertisement.

The business management is easy after you get your outfit and know how you should proceed, at the same time, it must be given the attention it deserves. As to the methods of advertising an entertainment, it seems that to work in connection with churches, societies, etc., has secured the best results. In this way you have the hearty co-operation of the most influential, and the people are at once interested, as they can see that they will not only be benefited by what they will learn, but that there will be also a financial benefit derived.

Propose to the most enterprising churches or societies in a town that you give an exhibition, and that providing they will attend to the advertising, sell the tickets, etc., that you will allow them a portion of the receipts, say from 25 to 40 per cent. You can judge what amount you wish to offer from experience, the conditions, etc. It will be announced in the church or society so that everybody will be familiar with it, and a small bunch of tickets will be placed with each person who would be expected to be in a position to sell them. In this way all the exhibitor has to do is to appear on the evening set to give the entertainment, give the exhibition and take his share of the money.

Another way is to start out the first few days, make arrangements for the use of halls, churches, opera houses, etc., in a number of towns; then go back near to the first place advertised on the day set for the exhibition. Make arrangements for a hall and advertise for an exhibition to come next after the one you last advertised. Return during the late afternoon to the first town you advertised and give your first exhibition. In the same way proceed along the line and you can be able to advertise during the day for an exhibition several days ahead, and give an exhibition every evening.

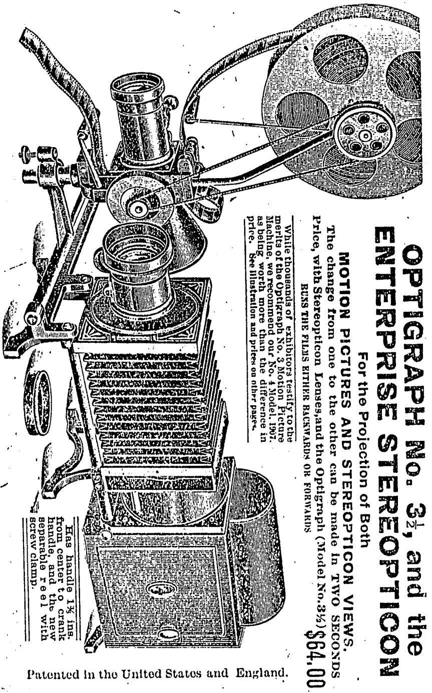
An advance agent is hired by some exhibitors where they are doing busines on a large scale. He is supposed to go ahead of the exhibitor about a week, make arrangements for the opera houses, halls, advertising, etc., and have everything in readiness so that when the exhibitor or lecturer arrives there is nothing for him to do but to give the entertainment. Sometimes the advance agent is paid a salary only, but the best way is to pay a small salary and a commission on the net amount of money made. This method stimulates the agent to make the very best arrangements and keep down the expenses as far as possible.

A Partner is preferred by some exhibitors, and such an arrangement is very desirable. We fit out many partners with outfits, and they have expressed themselves as much pleased with the results. As a rule one of the partners will go ahead and make engagements, attend to the advertising, etc., while the other follows with the outfit, and gives the entertainment. Money enough for a full outfit cannot always be furnished by one person, and here again it is desirable to make arrangements with someone who can not only furnish the balance necessary, but be of great assistance in the work.

Select your territory in which you wish to lecture, and in doing so select a good locality, where the people are prosperous, and thrifty, as here you will meet with the best returns. **Do not be afraid of competition,** because some exhibitor may have been through the same territory ahead of you. **Competition is the life of trade.** Your competitor may have been lacking in merit and enterprise, and even if he was not, push right to the front, and convince the people that you wish to give them something in the line of amusement which is superior to anything they have ever seen.

To start with, we would recommend the beginner to select small towns and even the churches, halls and school houses away from the railroads. The exhibitor who does this will meet with the best of results from the start, as there has been almost no competition, and it prepares him to take up the work in the larger towns. By following this method, he can push forward until there is no town or city too large, and no audience too metropolitan or too aristocratic to suit his ambitions, and the possibilities for honor and wealth are almost unlimited.

Advice will at all times be cheerfully furnished, as our success depends entirely on the success of our customers. If there is any particular difficulty which confronts you, or problem, the solution of which will contribute to your success, do not hesitate to write us. We have, in connection with our correspondence department, an expert in this line of work, who keeps strictly up to date in all matters pertaining to public entertainment, and he will give you the benefit of his experience, if you will only ask for it.



OPTIGRAPH No. 3½, and the ENTERPRISE STEREOPTICON

For the Projection of Both

MOTION PICTURES AND STEREOPTICON VIEWS.

The change from one to the other can be made in TWO SECONDS

Price, with Stereopticon Lenses, and the Optigraph (Model No. 3½) $64.00

RUNS THE FILMS EITHER BACKWARDS OR FORWARDS

While thousands of exhibitors testify to the merits of the Optigraph No. 3 Motion Picture Machine, we recommend our No. 4 Model, 1907, as being worth more than the difference in price. See illustration and prices on other pages.

Has handle 1⅜ ins. from center to crank handle, and the new separable reel with screw clamp.

Patented in the United States and England.